



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/092,746
Filing Date: March 07, 2002
Appellant(s): FELDMAN ET AL.

Eamon J. Wall
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 25, 2008 and amended appeal brief filed April 24, 2008 appealing from the Office action mailed November 8, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,483,616 B1	Maddocks et al.	11-2002
4,833,668	Rowley et al.	5-1989

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-10, and 12-14, 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maddocks et al. (U.S. Patent US 6,483,616 B1) in view of Rowley et al. (U.S. Patent US 4,833,668).

Regarding claims 1 and 10, Maddocks teaches a method, comprising:

reducing the power level of an optical data signal (The drawing, signal from amplifier 8) propagating in the optical fiber path in response to a loss of a counter-

propagating supervisory signal (The drawing, supervisory signal generated from supervisory insert 16) in another optical fiber path (the drawing, fiber 6);

reducing counter-propagating optical power (the drawing, data signal from amplifier 15) in response to a loss of the optical data signal (the drawing, the loss of data signal from amplifier 8; column 2, lines 63-67 and column 3, lines 1-15); and.

Responsive to the loss of the optical data signal, reducing counter-propagating optical signal power output from at least one additional network element (The drawing, amplifiers 15 and 18) by a predetermined amount (column 3, lines 7-12. Note that shutting down of the amplifiers reads on the claimed limitation of "reducing ... output power by a predetermined amount").

Maddocks differs from the claimed invention in that Maddocks does not specifically disclose that the counter-propagating optical supervisory signal is propagating in the same optical fiber as the optical data signal. However, Maddocks further discloses that the system could be a single optical fiber system. Specifically, Maddocks discloses "In an optical communication system which uses a single optical fiber to carry bidirectional traffic, ..." (see column 3, lines 44-49). When only one fiber is used for the system, the counter-propagating supervisory channel is propagating in "the optical fiber path". In addition, Rowley from the same field of endeavor discloses to counter-propagate optical supervisory signal in a same optical fiber in which the optical data signal propagates (fig. 2. Note that the supervisory channel detected by detector 16 is "counter-propagating" with respect the signal transmitted by transmitter 14. Similarly, the supervisory channel detected by detector 16' is "counter-propagating" with

respect the signal transmitted by transmitter 14'). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the system of Maddocks to counter-propagate a supervisory signal in the upstream optical fiber, as it is taught by Rowley. One of ordinary skill in the art would have been motivated to do so in order to reduce the time for detecting a fiber break.

Regarding claims 3 and 12, Maddocks further teaches that the step of reducing the power level of the optical data signal and the step of reducing counter-propagating optical power are performed substantially at the same time (column 2, lines 63-67 and column 3, lines 1-12).

Regarding claims 4, the method of Maddocks inherently comprises reducing pump power supplied by at least one pump source (the light signal generated by amplifier 8) coupled to the optical transmission line (the drawing, optical fiber 7).

Regarding claims 5 and 13-14, the method of Maddocks inherently comprises reducing counter-propagating pump power supplied by at least one pump source coupled to the optical transmission line (column 2, line 67 and column 3, lines 1-12).

Regarding claims 6-7, Maddocks further teaches that the power level of the optical data signal is reduced by a predetermined amount such that harm from an optical signal emanating from a fault in the optical transmission line is substantially reduced (column 3, lines 13-17).

Regarding claims 8-9, Maddocks further teaches that the method further comprising the step of restoring the power level of the optical data signal in response to

the presence or a notification of the presence of the counter-propagating supervisory signal (column 3, lines 49-58).

Regarding claims 16 and 20, Maddocks teaches a network element adapted for use in an optical transmission system, comprising:

a first gain element (fig. 1, amplifier 8), for providing an upstream optical signal to an optical transmission line (fig. 1, optical fiber 5);

a controller (fig. 1, laser control 21), for reducing the power level of the upstream optical signal generated by the first gain element in response to the absence of a counter-propagating supervisory signal (fig. 1, supervisory signal in fiber 6);

a second gain element (fig. 1, amplifier 18), for providing a counter-propagating downstream optical signal (fig. 1, signal in fiber 6, towards SWITCH 3) to an downstream optical fiber path;

the controller, for reducing the power level of the counter-propagating downstream optical signal generated by the second gain element to the downstream optical fiber path in response to the loss of an optical signal propagating in the downstream optical fiber path (column 2, line 57 to column 3, line 42; The description is applicable to the laser control 21 when a fiber cut occurs in fiber 6), wherein the controller, in response to the absence of the counter-propagating supervisory signal, provides an indication to a downstream network element (fig. 1, laser controller 21; column 2, line 57 to column 3, line 42) that the supervisory signal is absent.

Maddocks differs from the claimed invention in that Maddocks does not specifically teach that the supervisory signal is counter-propagating in the upstream

optical fiber path. However, Maddocks further discloses that the system could be a single optical fiber system. Specifically, Maddocks discloses "In an optical communication system which uses a single optical fiber to carry bidirectional traffic, ..." (see column 3, lines 44-49). When only one fiber is used for the system, the counter-propagating supervisory channel is propagating in "the optical fiber path". In addition, Rowley from the same field of endeavor discloses to counter-propagate optical supervisory signal in a same optical fiber in which the optical data signal propagates (fig. 2. Note that the supervisory channel detected by detector 16 is "counter-propagating" with respect the signal transmitted by transmitter 14. Similarly, the supervisory channel detected by detector 16' is "counter-propagating" with respect the signal transmitted by transmitter 14'). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the system of Maddocks to use one optical fiber and counter-propagate a supervisory signal in the upstream optical fiber, as it is taught by Rowley. One of ordinary skill in the art would have been motivated to do so in order to reduce the cost of the transmission optical fibers by utilizing one fiber to carry bidirectional signals.

Regarding claim 18, Maddocks further teaches that the network element comprises a repeater (column 2, lines 14-33).

Regarding claim 19, the gain element (fig. 1, amplifier 8 or 18) comprises at least one of an optical amplifier and a pump source (Note that Maddocks specifically discloses that elements 8, 11, 15, and 18 are amplifiers. See for example, column 2, lines 27-32; column 2, lines 57-62).

(10) Response to Argument

Appellant's arguments have been fully considered but they are not persuasive.

Appellant argues, "Maddocks does not teach a counter-propagating supervisory channel, but a co-propagating supervisory channel." (see second paragraph on page 12 of the Brief. Emphasis is added by Appellant.)

Please note, "co-propagating" means two signals propagate in the same direction; and "counter-propagating" means two signals propagate in opposite directions. Whether an optical supervisory signal is "co-propagating" or "counter-propagating" depends on the propagation directions of the optical data signal under consideration. An optical supervisory signal is "counter-propagating" if the optical data signal under consideration propagates in the opposite direction. As it is shown in fig. 1, Maddocks discloses that the supervisory channel is propagating in both the same direction (from left to right in fiber 5) and opposite direction (from right to left in fiber 6) relative to a data signal under consideration (the data signal propagate from left to right in fiber 5). In other words, Maddocks discloses both counter-propagating and co-propagating directions. Relative to the data signal propagates from left to right in fiber 5, the supervisory signal propagates from right to left in fiber 6 is a "counter-propagating" supervisory signal.

Maddocks further discloses that the system could be a single optical fiber system. Specifically, Maddocks discloses, "In an optical communication system which uses a single optical fiber to carry bidirectional traffic, ..." (see column 3, lines 44-49).

When only one fiber is used for the system, the counter-propagating supervisory channel is propagating in the same optical fiber path.

In addition, Rowley from the same field of endeavor discloses to counter-propagate optical supervisory signal in a same optical fiber in which the optical data signal propagates (fig. 2. Note that the supervisory channel detected by detector 16 is "counter-propagating" with respect the signal transmitted by transmitter 14. Similarly, the supervisory channel detected by detector 16' is "counter-propagating" with respect the signal transmitted by transmitter 14'). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to configure the system of Maddocks to use one optical fiber and counter-propagate a supervisory signal in the upstream optical fiber, as it is taught by Rowley. One of ordinary skill in the art would have been motivated to do so in order to reduce the cost of the transmission optical fibers by utilizing one fiber to carry bidirectional signals.

It is clear that that combination of Maddocks and Rowley undoubtedly discloses a "counter-propagating" supervisory signal.

Appellant argues that "neither Maddocks, Rowley nor Maddocks and Rowley in any possible combination disclose, teach or suggest at least the limitation of "reducing the power level of an optical data signal propagating in an optical fiber path in response to a loss of a **counter-propagating** supervisory signal in **the optical fiber path**." (see first paragraph on page 12 of the instant Brief. Emphasis is added by Appellant).

Please note that Maddocks explicitly and specifically discloses reducing the power level of an optical data signal (Maddocks' drawing, signal from amplifier 8)

propagating in the optical fiber path in response to a loss of a counter-propagating supervisory signal (Maddocks' drawing, supervisory signal generated from supervisory insert 16) in another optical fiber path (the drawing, fiber 6). As it has been discussed above, the combination of Maddocks and Rowley discloses a "counter-propagating" supervisory signal. Therefore, the combination of Maddocks and Rowley clearly discloses the claimed limitation of "reducing the power level of an optical data signal propagating in an optical fiber path in response to a loss of a counter-propagating supervisory signal in the optical fiber path".

Appellant further argues that "**There is no supervisory signal in Rowley,** counter propagating or otherwise" (see second paragraph on page 15 of the instant Brief. Emphasis is added by Appellant).

Please note Rowley **clearly and explicitly** illustrated a "SUPERVISORY AND ERROR DETECTOR CIRCUIT" in fig. 2. Rowley also **specifically and explicitly** discloses in column 5, lines 48-51:

"Alternatively or additionally, the inversion may alter **supervisory signals** such as the frame alignment signal so that fault condition is indicated".

Furthermore, as it is illustrated and **clearly labeled** in Fig. 2, the data signal transmitted from TxA 14 and the supervisory signal detected by detector circuit 16 propagate in opposite directions in fiber 3.

Therefore, Rowley clearly, explicitly, and undoubtedly discloses a "counter-propagating" supervisory signal.

Appellant further argues, "Rowley's 'supervisory and error detector circuits' (fig. 2) reside after receivers 15 and 5', functioning **fully in the digital domain**, and digitally monitoring for discrepancies only in the encoded data signal." (see fourth paragraph on page 15 of the instant Brief). However, in accordance with MPEP, "USPTO personnel **are to give claims their broadest reasonable interpretation** in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). **Limitations appearing in the specification but not recited in the claim should not be read into the claim.** E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003)" (see MPEP §2106, emphasis added). For the instant application, the claim language does not distinguish the claimed invention from the prior art references. The "supervisory signal" of Rowley reads on the claimed "supervisory signal".

In view of the above discussion, the combination of the prior art references clearly reads the claims with their broadest reasonable interpretation and Examiner has established a prima facie case of obviousness.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

(12) Related Proceeding(s) Appendix

Art Unit: 2613

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Quan-Zhen Wang/
Examiner, Art Unit 2613

Conferees:

/Jason Chan/

Supervisory Patent Examiner, Art Unit 2613

/Kenneth N Vanderpuye/

Supervisory Patent Examiner, Art Unit 2613